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Terms: [patno=6196311](#) [\(Edit Search\)](#)

175664 (09) 6196311 March 6, 2001

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT  
**6196311**

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March 6, 2001

Universal cementing plug

**REISSUE:** October 3, 2001 - Reissue Application filed Oct. 3, 2001 (O.G. Dec. 11, 2001) Ex. Gp.: 3671; Re. S.N. 09/970,432 (O.G. December 11, 2001)

**INVENTOR:** Treece, Harold O. - Duncan, Oklahoma

**APPL-NO:** 175664 (09)

**FILED-DATE:** October 20, 1998

**GRANTED-DATE:** March 6, 2001

**ASSIGNEE-AT-ISSUE:** Halliburton Energy Services, Inc., Duncan, Oklahoma, 02

**ASSIGNEE-AFTER-ISSUE:** October 20, 1998 - ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS)., HALLIBURTON ENERGY SERVICES, INC. 4100 CLINTON DRIVE HOUSTON, TEXAS 77020,, Reel and Frame Number: 009536/0711

**LEGAL-REP:** Roddy, Craig W.; Kennedy, Neal R.

**IPC-MAIN-CL:** 7E 21B033#16

**PRIM-EXMR:** Novosad, Christopher J.

**CORE TERMS:** plug, cementing, casing, insert, shearable, cup, cement, wiping, jacket, wiper  
...

**ENGLISH-ABST:**

A cementing plug having a universal construction and improved wiping and extended wear characteristics. The cementing plug has a plug subassembly with a body member and an elastomeric jacket on the body member. The body member defines a central opening therethrough with a shoulder therein. To configure the plug as a bottom cementing plug, a shearable insert is positioned on the shoulder, and to configure the plug as a top cementing plug, a non-shearable insert is positioned on the shoulder. The shearable insert is one of a plurality of such inserts designed to shear at correspondingly different shear pressures. In a first embodiment, the shearable insert is a substantially flat disk having a uniform thickness, and in a second embodiment, the shearable insert has an outer ring portion and a relatively

thin inner domed portion. Thus, a bottom plug may be pumped down a well casing with cement and a top plug thereabove so that when the bottom plug lands at the bottom of the casing, the shearable insert will shear at the predetermined pressure. The jacket has one or more wiper cups which have a conical surface extending at an acute angle with respect to a longitudinal axis of the plug, thereby providing a substantially large contact area in the well casing to improve wiping efficiency and extend life.

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Source: [Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility, Design and Plant Patents](#)  
[\(i\)](#)

Terms: [patno=6196311](#) ([Edit Search](#))

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Segments: [Appl-no](#), [Assignee](#), [Asst-exmr](#), [Date](#), [Exmr](#), [Int-cl](#), [Inventor](#), [Legal-rep](#), [Patno](#), [Pct-pub-date](#), [Prim-exmr](#), [Reissue](#), [Title](#)

Date/Time: Thursday, April 10, 2003 - 9:00 AM EDT

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*Patent Cases from  
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1/1 PLUSPAT - ©QUESTEL-ORBIT

**Patent Number :**

US6196311 B1 20010306 [US6196311]

**Title :**

(B1) Universal cementing plug

**Patent Assignee :**

(B1) HALLIBURTON ENERGY SERV INC (US)

**Patent Assignee :**

Halliburton Energy Services, Inc., Duncan OK [US]

**Inventor(s) :**

(B1) TREECE HAROLD O (US)

**Application Nbr :**

US17566498 19981020 [1998US-0175664]

**Priority Details :**

US17566498 19981020 [1998US-0175664]

**Intl Patent Class :**

(B1) E21B-033/16

**EPO ECLA Class :**

E21B-033/16

**US Patent Class :**

ORIGINAL (O) : 166192000

**Document Type :**

Corresponding document

**Citations :**

US3605896; US3616850; US3768556; US3768562; US3796260; US3948322; US4246967; US424696  
US4836279; US4858687; US4934452; US5095980; US5437330; US5533570; US5722491; US581345  
A1; EP0498990 A1; EP0697496 A2; EP0774564 A2; EP0869257 A2; FR2663678 A1  
Halliburton Services Sales & Service Catalog No. 44, pp. 26-30 and 48-52 (1990).

**Publication Stage :**

(B1) U.S. Patent (no pre-grant pub.) after jan. 2, 2001

**Abstract :**

A cementing plug having a universal construction and improved wiping and extended wear characterist cementing plug has a plug subassembly with a body member and an elastomeric jacket on the body me

member defines a central opening therethrough with a shoulder therein. To configure the plug as a bottom plug, a shearable insert is positioned on the shoulder, and to configure the plug as a top cementing plug insert is positioned on the shoulder. The shearable insert is one of a plurality of such inserts designed to correspondingly different shear pressures. In a first embodiment, the shearable insert is a substantially uniform thickness, and in a second embodiment, the shearable insert has an outer ring portion and a relatively domed portion. Thus, a bottom plug may be pumped down a well casing with cement and a top plug then deployed when the bottom plug lands at the bottom of the casing, the shearable insert will shear at the predetermined shear pressure. The jacket has one or more wiper cups which have a conical surface extending at an acute angle with respect to the longitudinal axis of the plug, thereby providing a substantially large contact area in the well casing to improve efficiency and extend life.

**Update Code :**

2001-14

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1 / 1 LGST - ©LEGSTAT

**Patent Number :**

US 6196311 [US6196311]

**Application Details :**

US 175664/98 19981020 [1998US-0175664]

**Document Type :**

US-P

**Action Taken :**

19981020 US/AE-A

APPLICATION DATA (PATENT)

US 175664/98 19981020 [1998US-0175664]

20010306 US/BA

PATENT (NO PREVIOUS PRE-GRANT PUBLICATION)

20011211 US/RF

REISSUE APPLICATION FILED

20011003

**Update Code :**

2001-51

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1 / 1 CRXX - ©CLAIMS/RRX

**Patent Number :**

6,196,311 A 20010306 [US6196311]

**Patent Assignee :**

Halliburton Energy Services Inc

**Actions :**

20011003 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20011211  
REISSUE REQUEST NUMBER: 09/970432  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 3671

Reissue Patent Number:

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**Query/Command : us6196311/pn**

**\*\* SS 2: Results 1**

Search statement 3

**Query/Command : PRT SS 2 MAX 1 LEGAL**

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1 / 1 INPADOC - ©INPADOC

**Patent Number :**

US 6196311 BA 20010306 [US6196311]

**Title :**

UNIVERSAL CEMENTING PLUG

**Inventor(s) :**

TREECE HAROLD O [US]

**Patent Assignee (Words) :**

HALLIBURTON ENERGY SERV INC [US]

**Application Details :**

US 175664/98-A 19981020 [1998US-0175664]

**Priority Details :**

US 175664/98-A 19981020 [1998US-0175664]

**Intl. Patent Class. :**

E21B-033/16

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**Patent Number :**

US 6196311 [US6196311]

**Application Details :**

US 175664/98 19981020 [1998US-0175664]

**Document Type :**

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**Action Taken :**

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APPLICATION DATA (PATENT)

US 175664/98 19981020 [1998US-0175664]

20010306 US/BA

PATENT (NO PREVIOUS PRE-GRANT PUBLICATION)

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REISSUE APPLICATION FILED

20011003

**Update Code :**

2001-51

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